

STEPANOVA, L.A.

Experimental investigation of the ecology of the turnip sawfly  
Athalia colibri Christ (Hymenoptera, Tenthredinidae). Trudy  
Kar.fil.AN SSSR no.14:138-150 '59. (MIRA 15:12)  
(Karelia—Sawflies)  
(Karelia—Brassicaceae—Diseases and pests)

STEPANOVA, L.A.

Pests of cruciferous plants in northern Karelia and their control.  
Trudy Kar. fil. AN SSSR no.29:96-104 '61. (MIRA 15:2)  
(Karelia--Brassicaceae--Diseases and pests)

STEPANOVA, L.A.

Role of food factor in the mass reproduction of pests feeding on  
leaves of the cruciferous plants. Ent.oboz. 40 no.3:512-520  
'61. (MIRA 15:3)

1. Vsesoyuznyy institut zashchity rasteniy Vsesoyuznoy akademii  
sel'skhokhozyaystvennykh nauk imeni Lenina, Leningrad.  
(Brassicaceae--Diseases and pests)  
(Insects, Injurious and beneficial)

STEPANOVA, L.A.

Causes of outbreaks of the cabbage moth. Vop. skol. 7:171-172  
'62. (MIRA 16:5)

1. Vsesoyuznyy institut zashchity rasteniy, Leningrad.  
(Diamondback moth)

STEPANOVA, L. A.

Ecologic analysis of the developmental conditions of pests  
of brassicaceous vegetable crops in nature. Ent. oboz. 41  
no.4:721-736 '62. (MIRA 16:1)

1. Vsesoyuznyy institut zashchity rasteniy, Leningrad.

(Brassicaceae—Diseases and pests)  
(Insects, Injurious and beneficial)

ZHDAN, S.Z., kand. tekhn. nauk; KRASYUK, I.S., inzh.; STEPANOVA, N.I.,  
inzh.

Rated characteristics of Freon ejectors. Khol. tekhn. i tekhn.  
no.1:61-68 '65. (MIRA 18:9)

STEPANOVA, L.A.

Phenology of vegetable pests in the Leningrad region and its  
prognosis. Ent. oboz. 44 no.3:486-494 '65. (MIRA 18:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zashchity rasteniy,  
Leningrad.

KOBYAKOV, A.I., dotsent, kand. ~~tekhn.~~ nauk; STEPANOVA, L.B., diplomnitsa

Slightly stretchable tricot fabrics made with synthetic and rayon yarn. 'Tekst.prom. 22 no.12:40-44 D '62. (MIRA 16:1)

1. Kafedra tekstil'nogo materialovedeniya Moskovskogo tekstil'nogo instituta (for Koblyakov). 2. Moskovskiy tekstil'nyy institut (for Stepanova).  
(Knit goods) (Textile fibers, "Synthetic")



NIKOLAYENKO, Ye.G., inzh.; VITKOV, S.I., kand.tekhn.nauk; STEPANOVA, L.D.,  
inzh.

Effect of cold deformation on the properties of cast iron sheet.  
Nauch. trudy DMI no.39:243-251 '60. (MIRA 13:10)  
(Rolling (Metalwork)) (Cast iron)

32794  
S/137/61/000/012/078/149  
A006/A101

18 5100

1496 1413 1454

AUTHORS: Grudev, A. P., Zil'berg, Yu. V., Zhuk, V. G., Stepanova, L. D.,  
Tarshinov, V. I.

TITLE: Peculiarities of cold rolling of cast iron sheets

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 12, 1961, 7, abstract 12D43  
(V sb. "Polucheniye izdeliy iz zhidk. met. s uskoren. kristallizatsiyey", Moscow-Kiyev, Mashgiz, 1961, 211-223)

TEXT: Investigations were made with specimens and sheets of conventional cast-iron containing in %: C 3 - 3.4; Si 1.4 - 1.7; Mn 0.4 - 0.7; S 0.1, P about 0.1. It was established that the optimum degree of deformation in cold rolling of sheets which assures the highest indices of strength and ductility, is 25 - 30%. The properties of sheets depend mainly on total deformation; the effect of the factor of deformation divisibility during rolling was very small. High-quality longitudinal rolling of sheets is achieved in rolls with concave outline, i.e. when the shape of the slit between the rolls corresponds to the cross sectional shape of the sheet supplied for rolling. It is also required that the sheets be free of slag trails. The use of spindle oil as a technological

Card 1/2

ELYUYEV, G.M., kand.tekhn.nauk; YUNITSKAYA, Ye.I., starshiy inzh.;  
RYAKOVA, E.Ya.; Prinimali uchastiye: PETROV, A.M.; SHISHKIN, A.F.;  
KNAUS, O.M.; RUSAKOVA, R.A.; STEPANOVA, L.G.; KALINKIN, V.F.;  
GOPPALOVA, N.K.; SACHKOV, V.F.; FROLOV, K.F.; LUKASHOVA, T.T.;  
SAVKIN, P.S.

Grain-size distribution in the material produced by crushing rock.  
Sbor. trud. NIIZHelezobetona no.3:69-90 '60. (MIRA 15:2)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut zhelezobeton-  
nykh izdelii, stroitel'nykh i nerudnykh materialov (for Petrov,  
Shishkin, Knaus, Rusakova, Stepanova, Kalinkin, Gopkalova, Sachkov,  
Frolov, Lukashova, Savkin).

(Stone, Crushed)

STEPANOVA, Lyubov' Grigor'yevna; ALEKSEYEVA, R.L., red.; ALYAKRITSKAYA,  
L.S., tekhn.red.

[High standard cultivation practices as a guarantee of high  
grape yields] Vysokaia agrotekhnika - zalog khoroshikh  
urozhaev vinograda. Rostov-na-Donu, Rostovskoe knizhnoe  
izd-vo, 1960. 20 p. (MIRA 14:12)

1. Upravlyayushchaya vinogradarskim oddeleniyem Razdorskogo  
vinsovkhoza (for Stepanova).  
(Grapes)

MEREMSON, Yakov Leonidovich; STEPANOVA, Lyubov' Gerasimovna;  
KHAYKIN, Ya.L., inzh., retsensent; NOVIKAS, M.N., inzh.,  
red.; VOROTNIKOVA, L.F., tekhn. red

[Experience in operating the ZhR-4 transmitter-receiver]  
Opyt ekspluatatsii radiostantsii tipa ZhR-4. Moskva, Trans-  
zheldorizdat, 1962. 51 p. (MIRA 15:10)  
(Radio) (Railroads--Communication systems)

NAVASHIN, S.M.; STEPANOVA, L.G.

Effect of certain antibiotics on the development of monolayer tissue cultures (HeLa and H. Ep. 2 strains) of human neoplasms. Antibiotiki 38-44 N-D '59. (MIRA 13:3)

1. Laboratoriya novykh antibiotikov kafedry mikrobiologii (zaveduyushchiy - chlen-korrespondent AMN SSSR prof. S.B. Yermol'yeva) Tsentral'nogo instituta usovershenstvovaniya vrachey i laboratoriya immunobiologii Moskovskogo instituta preparatov protiv poliomyelita.  
(ANTIBIOTICS pharmacol.)  
(NEOPLASMS exper.)

ZALKIND, S.Ya.; STEPANOVA, L.G.

Comparative cytological analysis of cells in tissue culture under normal conditions and following exposure to the polio-myelitis virus. Report No.1: Dynamics of cytological changes in four strains of cultivated cells in normal conditions. Biul.eksp.biol. i med. 47 no.6:110-115 Je '59. (NIRA 12:8)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta preparatov protiv poliomielita. Predstavlena deystvitel'nym chlenom AN SSSR V.N.Chernigovskim.

(TISSUE CULTURE,

cytol. of normal cells & cells exposed to polio. virus (Rus))

(POLIOMYELITIS VIRUS,

cytol. of cells in normal tissue culture & cells exposed to polio. virus (Rus))

... STEPANOVA, L.G.

Characteristics of various cell strains and their sensitivity to  
poliomyelitis virus. Vop.virus. 5 no.3:316-321 My-Je '60.

(MIRA 13:9)

1. Moskovskiy nauchno-issledovatel'skiy institut preparatov protiv  
poliomyelita.

(POLIOMYELITIS)



ANDZHAPARIDZE, O.G.; KHESIN, Ya.Ye.; AMCHENKOVA, A.M.; STEPANOVA, L.G.

Study of the properties of Cynomologus monkey heart cells by  
inoculation into immunized monkeys and re-explantation. Vop.  
virus. 5 no.3:351-359 My-Je '60. (MIRA 13:9)

1. Moskovskiy nauchno-issledovatel'skiy institut preparatov protiv  
poliomiylita.

(NEOPLASMS)

(VIRUSES)

ZALKIND, S.Ya.; STEPANOVA, L.G.

Comparative cytological analysis of tissue culture cells under normal conditions and under the influence of the poliomyelitis virus. Report No.2: Cytological changes in cells cultivated under the influence of the poliomyelitis virus. Biul. eksp. biol i med. 50 no.12:76-80 D '60. (MIRA 14:1)

1. Is Moskovskogo nauchno-issledovatel'skogo instituta virusnykh preparatov Ministerstva zdravookhraneniya Soyusa SSSR. Predstavlena deystvitel'nym chlenom AMN SSSR G.V. Vygodchikovym.  
(POLIOMYELITIS) (TISSUE CULTURE)

STEPANOVA, L. G., CAND MED SCI, "A <sup>the</sup> COMPARATIVE STUDY OF  
THE PROPERTIES OF CERTAIN TRANSPLANTED CELLS AND THEIR SEN-  
SITIVITY TO <sup>the</sup> POLIOMYELITIS VIRUS." MOSCOW, 1961. (MIN OF  
HEALTH USSR. CENTRAL INST FOR <sup>the</sup> ADVANCED TRAINING OF PHYSI-  
CIANS). (KL-DV, 11-61, 230).

-285-

STEPANOVA, L.O.

Stability of the properties of transplanted cells. Trudy  
Musk. nauch.-issl. inst. virus. prep. 2:251-260 '61.  
(MIRA 17:1)

ANDZHAPARIDZE, O.G.; STEPANOVA, L.G.

Interaction of the virus of tickborne encephalitis with susceptible cells. Report No.3: Plaques formed by the virus in a culture of kidney cells from swine embryos. Vop.virus 6 no.4:404-408 J1-Ag '61. (MIRA 14:11)

1. Moskovskiy nauchno-issledovatel'skiy institut virusnykh preparatov. (ENCEPHALITIS)

ZALKIND, S.Ya.; STEPANOVA, L.G.; TERSIKH, V.V.

Stability of transplantable cell lines. Biul. eksp. biol. i med. 53  
no. 496-99 Ap '62. (MIRA 15:4)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta virusnykh  
preparatov. Predstavlena deystvitel'nym chlenom AN SSSR V.V.  
Parinym.

(TISSUE CULTURE)

(CYTOLOGY)

(VIROLOGY)

ANDZHAPARIDZE, O.G.; DESYATSKOVA, R.G.; STEPANOVA, I.G.

Possibility of using the plaque test for quantitative study of  
the virus of tick-borne encephalitis and its RNA. Vop. virus.  
9 no.3:335-339 My-Je '64.

(MIRA 18:1)

1. Moskovskiy nauchno-issledovatel'skiy institut virusnykh  
preparatov.

AVDEYEV, N.I.; LEBEDEV, I.G.; BOGOMOLOVA, N.N.; LEBYANKOVA, R.G.

Study of the variability of tick-borne encephalitis viruses.

Report No.1. Voj. virus. 10 no.2:165-167 Mr-Apr '65.

(MIRA 18:10)

1. Moskovskiy nauchno-issledovatel'skiy institut virusnykh preparatov.



STEPANOVA, L. I.; and RAKHMATULIN, Kh. A.

"Propagation of the Explosive Shock Wave in Soils," Theoretical Problems in  
Crushing Rock by Blasting, Moscow, Izd-vo AN SSSR, 1958. 161 p.

STEPANOVA, L. I.: Master Mod Sci (diss) -- "The comparative and combined effect of phosphacol with a number of pharmacological substances in glaucoma". Gor'kiy, 1959. 15 pp (Gor'kiy State Med Inst im S. M. Kirov), 215 copies (KL, No 14, 1959, 124)

IVANCY, E.K.; UVAROVA, R.N.; STEPANOVA, L.K.

Chemical composition of surface antigens of Salmonella paratyphi B.  
Vop. med. khim. 10 no.5:474-479 S-O '64.

(MIRA 18:11)

1. Otdel radiatsionnoy mikrobiologii i immunologii Instituta  
epidemiologii i mikrobiologii imeni Gamalei AMN SSSR, Moskva.

STEFANOVA, L. K.

"Immuno-electrophoretic analysis of Salmonella Paratyphi B."

report presented at 4th Intl Cong, Hungarian soc of Microbiologists, Budapest,  
30 Sep-3 Oct 64.

Inst of Epidemiology & Microbiology im Gamaleya, AMS USSR, Moscow.

L 0:909-66 EWT(1)/EWA(j)/EWA(b)-2 JK

ACCESSION NR: AP5017018

UR/0016/65/000/007/0048/0052  
615.372 : 576.851.49]-011/-012

AUTHOR: Stepanova, L. K.; Lifanova, I. I.

TITLE: Preparation of dry adsorbed paratyphoid B vaccine and its properties

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 7, 1965, 48-52

TOPIC TAGS: antigen, vaccine, immunology

ABSTRACT: A complex surface (K) and somatic antigen made from paratyphoid B bacteria by Webster and Landy's salt extraction method contained a phosphorylated protein-lipid-polysaccharide complex containing 3% phosphorus, 8% nitrogen, and 23% reducing agents. It was found to have high antigenic and immunogenic activity together with a very rich antigenic spectrum. The antigen was made into a dry vaccine and tested in mice. Subcutaneous injection of the animals with a dose 10 times higher than the human failed to kill any of the mice. Other tests in the same animals showed the vaccine to be highly immunogenic and stable. The authors recommend that the complex antigen be incorporated into an adsorbed typhoid-paratyphoid B vaccine. Such vaccine could be used as a standard in evaluating the immunogenicity of a

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L 00909-66

ACCESSION NR: AP5017018

commercial series of chemical adsorbed vaccines. Orig. art. has: 1 figure, 3 tables. 4

ASSOCIATION: Institut epidemiologii i mikrobiologii im. Gamalei AMN SSSR (Institute of Epidemiology and Microbiology, AMN SSSR); Gosudarstvennyy kontrol'nyy institut im. Tarasevicha (State Control Institute) 55

SUBMITTED: 18Jun64

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Card 2/2 SP

11-11-67 EMT(1) JK  
ACC NR: AP6034516

SOURCE CODE: UR/0016/66/000/010/0007/0010

AUTHOR: Stepanova, L. K.; Sergeyeva, N. S.

ORG: Institute of Epidemiology and Microbiology im. Gamaleya, AMN SSSR,  
Moscow (Institut epidemiologii i mikrobiologii AMN SSSR)

TITLE: Biological properties and antigenic structure of Paratyphoid B  
auxotrophs

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 10,  
1966, 7-10

TOPIC TAGS: microbiology, bacteriology, paratyphoid B bacterium,  
auxotroph, antigen, antigenic structure, *biologic* mutation

ABSTRACT: In auxotrophic mutants of paratyphoid B bacteria, antigenic composition is often different from that of parent strains. In particular, mutants that have lost the ability to synthesize K antigen had lowered virulence but possessed greater immunogenic properties than the parent strain. The study of auxotrophic mutants is useful in revealing significant changes in the metabolism, antigenic structure, and virulence of pathogens. In addition to the loss of ability to synthesize certain antigens, the loss of ability to synthesize certain basic com-

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UDC: 576.851.49.095.57.095.14

L 08742-67

ACC NR: AP6034516

pounds and specific enzyme blockage are also connected with losses in virulence. Orig. art. has: 2 tables and 3 figures. [W.A. 50]

SUB CODE: 06/ SUBM DATE: 17Jan66/ ORIG REF: 002/ OTH REF: 009

Card 2/2 bc



NECHAYEV, V.I.; STEPANOVA, L.L.

Distribution of non-residues and primitive roots in recursive  
sequences over a field of algebraic numbers. Usp. mat. nauk  
20 no.3:197-203 My-Je '65. (MIRA 18:6)

SEGAL', A.N.; STEPANOVA, L.N., inzh.-khimik

Procion dyes. Tekst. prom. 19 no.11:56-60 N '59. (MIRA 13:2)

1.Glavnyy kolorist Pervoy sitsenabivnoy fabriki (for Segal').  
(Dyes and dyeing) (Textile printing)

STEPANOVA, L. N.

Stepanova, L. N. — "Denitrifying Bacteria of the Root System of Flax and Wheat and Their Influence on the Plant." All-Union Acad of Agricultural Sci imeni V. I. Lenin, Moscow Department of the All-Union Sci Res Inst of Agricultural Microbiology, Moscow, 1955 (Dissertation for Degree of Candidate of Biological Sciences).

SO: Knizhnaya Letopis', No. 23, Moscow, June, 1955, pp. 87-104.

USSR / Cultivated Plants. Fodders.

Abs Jour: Ref Zhur-Biol., No 6, 1958, 25070

Author : Stepanova, L.

Inst : Not given

Title : The Perennial Grasses in Zapolyar'ye

Orig Pub: S. kh. Sibiri, 1957, No 2, 55-57

Abstract: The winter-hardy grass species picked out for the conditions prevailing in Yeniseysoye Zapolyar'ye are the meadow foxtail grass, Kentucky blue grass, *Poa sylvestris* A. Gray, both red and meadow fescue, *Beckmannia*, bent grass, Siberian wild rye and *Agropyrum tenerum*. The biology of their development and their agrotechny were studied. Under experimental conditions these grass species yielded 199-351 centners per ha. of green stuff, exceeding the harvest of barley for green feed by 15-88%.

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USSR / Cultivated Plants. Fodders.

M-4

Abs Jour: Ref Zhur-Biol., No 6, 1958, 25070

Abstract: The grass was planted without a cover, and one applied 40 t. per ha. of manure, 1-1.5 centners per ha. of  $P_2O_5$ , 4.5 t. of ash and 2-3 t. per ha. of lime. A mixture of clover and timothy on the bottomland yielded at least 3 t. per ha. of hay. Stubbing natural meadows, furrowing them, the application of mineral fertilizers-nearly doubled the harvest. This study was made in Noril'skiy, Kureyskiy, Dudinskiy sovkhoses in Krasnoyarskiy Kray. -- M. A. Novoderzhkina

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STEPANOVA, L.N., FISH, E.M.

Toxic bacteria in Turf-Podzolic soils [with summary in English]  
Izv. AN SSSR Ser.biol. no.3:361-368 My-Je '58 (MIRA 11:6)

1. Agrobiologicheskaya stantsiya Moskovskogo gosudarstvennogo universiteta, Laboratoriya pochvennoy mikrobiologii.  
(PODZOL)  
(SOILS--BACTERIOLOGY)

STEPANOVA, L.N.

Denitrifying bacteria from the root system of flax and wheat and  
their effect on plants. Trudy Vses. inst. sel'khoz. mikrobiol.  
no.14:113-122 '58. (MIRA 15:4)  
(Bacteria, Denitrifying) (Rhizosphere microbiology)

STEPANOVA, L.N.

Effect of prolonged application of mineral fertilizers on the amount of toxic bacteria in turf-Podzolic soils. Nauch.dokl. vys.shkoly; biol.nauki no.3:243-247 '59. (MIRA 12:10)

1. Rekomendovana kafedroy Mologii pochv Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova.

(FERTILIZERS AND MANURES) (SOILS--BACTERIOLOGY) (PODZOL)



AYDONIN, N.S.; ARENS, I.P.; STEPANOVA, L.N.

Effect of fertilizers on the properties of turf-Podsolic soils.  
Pochvovedenie no.9:25-34 S '60. (MIRA 13:9)

1. Moskovskiy gosudarstvennyy universitet.  
(Podzol) (Fertilizers and manures)

TROFIMOV, A.M.; STEPANOVA, L.N.

Change in the magnitude of the charge of zirconium ions in a nitric acid solution, as determined by means of ion exchange resins. Radio-  
khimii 1 no.4:403-407 '59. (MIRA 13:1)  
(Zirconium--Isotopes)



SECRET V. I. N  
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PHASE I BOOK EXPLOITATION SOV/5+10

Tashkentskaya konferentsiya po mirnomu ispol'zovaniyu atomnoy energii. Tashkent, 1959.

Trudy (Transactions of the Tashkent Conference on the Peaceful Use of Atomic Energy) v. 2. Tashkent, Izd-vo AN UzSSR, 1960. 349 p. Errata slip inserted. 1,500 copies printed.

Sponsoring Agency: Akademiya nauk Uzbekskoy SSR.

Responsible Ed.: S. V. Starodubtsev, Academician, Academy of Sciences Uzbek SSR. Editorial Board: A. A. Abdullayev, Candidate of Physics and Mathematics; D. H. Abdurazulov, Doctor of Medical Sciences; U. A. Arifov, Academician, Academy of Sciences Uzbek SSR; A. A. Borodulina, Candidate of Biological Sciences; V. N. Ivachev; G. S. Ikramova; A. Ye. Kiv; Ye. H. Lohmanov, Candidate of Physics and Mathematics; A. I. Nikolayev, Candidate of Medical Sciences; D. Mishanov, Candidate of Chemical Sciences; A. S. Sadykov, Corresponding Member, Academy of Sciences USSR, Academician, Academy of Sciences Uzbek SSR; Yu. N. Talanin,

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Transactions of the Tashkent (Cont.)

SOV/5410

Candidate of Physics and Mathematics; Ya. Kh. Turakulov, Doctor of Biological Sciences. Ed.: R. I. Khamidov; Tech. Ed.: A. G. Babukhanova.

**PURPOSE:** The publication is intended for scientific workers and specialists employed in enterprises where radioactive isotopes and nuclear radiation are used for research in chemical, geological, and technological fields.

**CONTENTS:** This collection of 133 articles represents the second volume of the Transactions of the Tashkent Conference on the Practical Uses of Atomic Energy. The individual articles deal with a wide range of problems in the field of nuclear radiation, including: production and chemical analysis of radioactive isotopes; investigation of the kinetics of chemical reactions by means of isotopes; application of spectral analysis for the manufacturing of radioactive preparations; radioactive methods for determining the content of elements in the rocks; and an analysis of methods for obtaining pure substances. Certain

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Transactions of the Tashkent (Cont.)

SOV/5410

instruments used, such as automatic regulators, flowmeters, level gauges, and high-sensitivity gamma-relays, are described. No personalities are mentioned. References follow individual articles.

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RADIOACTIVE ISOTOPES AND NUCLEAR RADIATION  
IN ENGINEERING AND GEOLOGY

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7

Taksar, I. M., and V. A. Yanushkovskiy [Institut fiziki AN Latv SSR - Institute of Physics AS Latvian SSR]. Problems of the Typification of Automatic-Control Apparatus Based on the Use of Radioactive Isotopes

9

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Reactions of the Tashkent (Cont.)	SOV/5410
Radium Institute imeni V.G. Khlopin AS USSR]. State of the Micro-quantities of Radioactive Elements in Solutions	353
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Korotkiyev, B. V., and V. A. Protashchik [Institute of Physical Organic Chemistry AS BelSSR]. Application of Radioactive $O^{18}$ for the Investigation of the Surface Size in the Reactions of Solid Substances	363
Ievin, V. I., and V. V. Bochkarev [Ministry of Health USSR]. Obtaining Radioactive Isotopes in the Reactors by Means of Threshold, Consecutive, and Secondary Nuclear Reactions	368
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S/054/60/000/004/007/015  
B004/B056

AUTHORS: Trofimov, A. M., Stepanova, L. N.

TITLE: Investigation of the Exchange of Ions of Different Valences on Swelling Ion Exchangers and Application of the Rules Found for the Determination of the Ion Charge in the Solution

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1960, No. 4, pp. 70-76 ✓

TEXT: Proceeding from B. P. Nikol'skiy's theory of ion exchange, the ion exchange in highly swelling exchange resins has been studied by radiochemical methods at the Radiyevyy Institut AN SSSR (Radium Institute of the AS USSR). It was experimentally established that the different swelling capacity greatly affects the selective adsorption in the exchange of ions of different valency. This is indicative of a different concentration of adsorbed ions in the resin. The ion exchange of KY-2 (KU-2)-type and MCΦ (MSF)-type resins was investigated by means of  $Ce^{144}$ ,  $Ra^{226}$ , and  $Cs^{134}$ . The following equation was derived for calculating the ion charge  $z$ :

$$z = \frac{[\log(\alpha^I/\alpha^{II}) + \log(v^{II}/v^I)]}{[\log(g^I/g^{II}) + \log(v^{II}/v^I)]} . \text{ Here,}$$

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Investigation of the Exchange of Ions of S/054/60/000/004/007/015  
 Different Valences on Swelling Ion Exchangers B004/B056  
 and Application of the Rules Found for the  
 Determination of the Ion Charge in the  
 Solution

$\alpha^I$ ,  $\alpha^{II}$  denote the distribution coefficients which were determined experimentally in resins with different specific volumes  $V^I$ ,  $V^{II}$ , and different specific capacities  $g^I$ ,  $g^{II}$ . This method of different ion concentrations in the resin phase was used to determine the charge of zirconium ions (Ref. 9) and, together with A. A. Grinberg, to determine the charge of ruthenium complexes (Ref. 10). G. V. Samsonov and A. B. Pashkov are mentioned. There are 2 tables and 10 references: 5 Soviet, 3 US, 1 British, and 1 German. ✓

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S/186/00/002/001/013/022  
A057/A129

AUTHORS: Grinberg, A.A.; Trofimov, A.M.; Stepanova, L.N.

TITLE: Determination of the charge of polynuclear complex ruthenium ions by the ion-exchange method

PERIODICAL: Radiokhimiya, v. 2, no. 1, 1960, 78 - 82

TEXT: The present investigation was carried out after a visit of one of the present authors in the laboratory of J.M. Fletcher in Harwell (England) in connection with some new data (reported by Fletcher et al. at the International Conference on Coordination Chemistry, London, May 6, 1959, under the title: binuclear chloro and other polynuclear complexes of ruthenium) concerning ruthenium complexes. In the discussion the investigators stated the importance of direct determination of the charge of the red polynuclear ruthenium cation, for which the British chemists assumed a charge of +6. Definite solution of this question was of interest apart from the verification of data obtained by Fletcher et al., because complex anions with charges greater than four are rare. F.M. Jaeger and P. Koets [Ref. 3: Z. anorg. Ch., 170, 347 (1928)] reported about nine-valent cations, but their existence is at present in question [J.C. Bailar, Ref. 4: Chem-

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S/186/60/002/001/013/022  
A057/A129

Determination of the charge of polynuclear....

istry of the Coordination Compounds, 65, N.Y. (1956)]. Hence it was important to discover a method to determine the charge of highly-charged cations. Thus the present authors investigated the applicability of the recently published ion-exchange method [A.V. Trofimov and L.N. Stepanova, Ref. 2: Radiokhimiya, 1, 4, 403 (1959)] to the determination of the charge of the red polynuclear ruthenium cation. In further investigations this method will be applied to check data obtained by Jaeger and Koets. In the present experiments a sample of the ruthenium complex synthesized by Fletcher et al. was used. The principle of the ion-exchange method consists in the determination of the distribution coefficient  $\alpha$  of radioisotopes on two ion-exchange resins with different swelling capacities. According to the rules of ion-exchange:  $\lg \frac{\alpha^I}{\alpha^{II}} = \frac{z_1}{z_2} \lg \frac{C^I}{C^{II}} + \frac{z_1 - z_2}{z_2} \lg \frac{V^{II}}{V^I}$  (1)

I and II refer to the resins with two swelling capacities,  $z_1$  - effective charge of the investigated ions;  $z_2$  - charge of the exchanged ions,  $Q^I$  and  $Q^{II}$  equivalent exchange capacity of the resins (per 1 g of dry resin),  $V^I$  and  $V^{II}$  - specific volumes of swollen resins under the conditions of the distribution coefficient determination. In the exchange of mono-valent ions ( $H^+$ ,  $Na^+$  etc.), the charge can be calculated by:

$$z = \frac{\lg \frac{\alpha^I}{\alpha^{II}} + \lg \frac{V^{II}}{V^I}}{\lg \frac{C^I}{C^{II}} + \lg \frac{V^{II}}{V^I}} (2)$$

and if the equivalent exchange capacities of the two resins are the same:  $z = \frac{\lg \frac{\alpha^I}{\alpha^{II}}}{\lg \frac{V^{II}}{V^I}} + 1 (3)$

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A057/A129

Determination of the charge of polynuclear....

The experimental determination of  $\alpha$  as well as of the specific volumes of the swollen ion-exchange resin must be carried out under the same conditions.. The investigated element must be ions. The ion-exchange must be strictly reversible and the complexes must be stable. According to Ye.I. Il'yenko, B.P. Nikol'skiy and A.M. Trofimov [Ref. 5: Tr. komissii po analiticheskoy khimii (Proceedings of the commission for analytical chemistry), Izd. AN SSSR (Ed. AS USSR), 9 (12), 148 (1958)] reversibility is not always maintained in exchange of ruthenium complexes. The present authors demonstrated in corresponding experiments that by adding  $\text{HNO}_3$  solution the red complex changes into a yellow complex, thus exchange using  $\text{H}^+$  ions cannot be carried out. It was observed that in  $\text{NaNO}_3$  solutions the complex is stable, and is strongly adsorbed on sulfonated KY-2 (KU-2) cation exchange resin. About 50% of the red complex is adsorbed from 3.5 N  $\text{NaNO}_3$  solution. Solutions containing between 0.5 and 5 mg/l ruthenium obey Beer's law with an absorption maximum at 460 m $\mu$ . Thus the present experiments were carried out with concentrations of 1.5 mg Ru/l, reversibility was tested and  $\alpha$  was determined as  $\sim 3,400$ . Two samples of the resin (containing 2% or 12% divinylbenzene) were soaked in 3.5 N  $\text{NaNO}_3$  solution and the specific volumes were determined picnometrically with octane resin with 2% divinylbenzene  $1.83 \pm 0.01$  ml/g; with 12% divinylbenzene  $1.37 \pm 0.01$  ml/g. The swelling capacity is doubled in water.

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A057/A129

Determination of the charge of polynuclear....

Since the exchange capacities for both resins are 4.83 - 4.85 mg equiv/g the calculations were done according to equation (3). The concentration of ruthenium in the initial and in equilibrated solutions was determined with a recording CΦ-2M (SF-2M) spectrophotometer and Φ2K-2M (FEK-2M) photoelectrocolorimeter using green filters. From the obtained results (see Fig.) the charge of the complex was calculated with  $z = 5.9$ . Thus data presented by Fletcher et al. are confirmed; on the other hand it is demonstrated that the present method can be used for determinations of the charge of polynuclear complexes. There are: 1 figure and 5 references: 2 Soviet-bloc and 3 non-Soviet-bloc. ✓

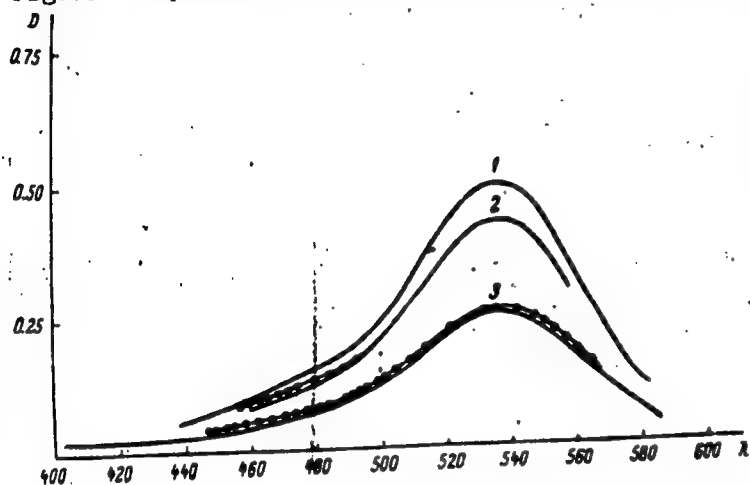
SUBMITTED: November 13, 1959

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S/186/60/002/001/013/022  
A057/A129

Determination of the charge of polynuclear....

Figure: Dependence of the optical density  $D$  of the solutions on wavelength in  $m$ : 1 - initial solution; 2 - solution equilibrated with 2% divinylbenzene containing resin; 3 - solution equilibrated with the resin containing 12% divinylbenzene.



Card 5/5

TROFIMOV, A.M.; STEPANOVA, L.N.

Study of the exchange of ions of various valences on swelling ion exchangers, and application of the mechanisms discovered to the determination of the ionic charge in solution [with summary in English]. Vest. LGU 15 no.22:70-76 '60. (MIRA 13:11)  
(Ion exchange)

86156

S/076/60/034/008/029/039/XX  
B015/B063

26.1610  
AUTHORS:

Trofimov, A. M. and Stepanova, L. N.

TITLE:

Radiochemical Study of Ion Exchange on Swollen Ion Exchangers

PERIODICAL:

Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 8,  
pp. 1837 - 1842

TEXT: Contrary to K. K. Gedroyts (Ref.1), B. P. Nikol'skiy (Ref.2), and Ye. N. Gapon (Ref.3) who discussed ion exchange with standard ion exchangers, the present authors discuss the behavior of swollen ion exchangers. This subject has also been discussed by Gregor (Ref.4), G. V. Samsonov (Ref.5), and Griessbach (Ref.6). Experiments have shown that the difference in the swelling capacity of ion exchangers has a particularly strong effect on the selectivity of exchange of ions of different valencies. The selective adsorption of ions of higher valency sharply increases with a decrease of the swelling capacity of the exchanger. This is ascribed to the varying ion concentration in the solid phase of ion exchangers with different swelling capacity. The rule of this phenomenon was theoretically and experimentally studied by the radio-

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86256

Radiochemical Study of Ion Exchange on  
Swollen Ion Exchangers

S/076/60/034/008/029/039/XX  
B015/B063

chemical method. The selectivity of adsorption of a radioactive element on two different ion exchangers may be determined from the ratio between the distribution coefficients  $\alpha$ :

$$\alpha_1^I/\alpha_1^{II} = (g^I/g^{II})^{z_1/z_2} \cdot (V^{II}/V^I)^{z_1-z_2/z_2} \cdot (f_2^I/f_2^{II})^{z_1/z_2} \cdot (f_1^{II}/f_1^I) \quad (8),$$

where I and II refer to the two exchangers;  $g$  is the absorbed quantity of ions per weight unit of the exchanger;  $V$  is the specific volume of the swollen exchanger;  $z_1$  and  $z_2$  denote the ion valency; and  $f_1$  and  $f_2$  are their activity coefficients.  $g$  and  $V$  may be easily determined by way of experiment. The activity coefficients can be represented by the function

$$\varphi(f) = (f_2^I/f_2^{II})^{z_1/z_2} \cdot f_1^{II}/f_1^I \quad (9).$$

The experiments were performed with

MCΦ (MSF) and KY-2 (KU-2) exchangers which had been made available by A. B. Pashkov, and the distribution of  $Ce^{144}$ ,  $Ra^{226}$ , and  $Cs^{134}$  in KCl solutions was studied. The measurements indicate that the swelling capacity of an exchanger greatly affects the distribution of ions of different valencies among exchanger and solution. Using the equation

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Radiochemical Study of Ion Exchange on  
Swollen Ion Exchangers

S/076/60/034/008/029/039/XX  
B015/B063

$\alpha V^{(z_1-z_2)/z_2} / z_1/z_2 = \text{const.}$  it is possible to determine the valency of a radioactive element in a solution by using two exchangers with equal specific exchange capacity but different swelling capacity. B.P.Nikol'skiy is thanked for a discussion. Polyanskiy is mentioned. There are 3 tables and 6 references: 4 Soviet, 1 US, and 1 German.

ASSOCIATION: Akademiya nauk SSSR Radiyevyy institut im. V. G. Khlopina  
(Academy of Sciences USSR, Radium Institute imeni  
V. G. Khlopin)

SUBMITTED: December 7, 1958

Card 3/3

STEPANOVA, L.S.

Smolensk Province conference of pediatricians. Vop. okh. mat. i det.  
6 no.7:94 J1 '61. (MIRA 14:8)  
(CHILDREN--DISEASES)

STEPANOVA, L.S.

Development and state of health of children with intracranial  
birth trauma. *Pediatrics* 39 no.3:35-39 Mar '61. (MIRA 14:4)

1. Iz kafedry fakul'tetskoy pediatrii (zav. - dotsent S.B.  
Davidson) Saratovskogo meditsinskogo instituta.  
(BRAIN—WOUNDS AND INJURIES) (BIRTH INJURIES)

KHOREVA, B.Ya.; KUREK, N.N., redaktor; STEPANOVA, L.S., redaktor; POPOV, N.D.,  
tekhnicheskii redaktor.

[Geological and petrological analysis of the southeastern section of the  
Irtysh zone of concentration] Geologo-petrologicheskii analiz iugo-vestochnoi  
chasti Irtyshskoi zony smiatia. (Leningrad. Vsesoiuznyi geologicheskii  
institut. Materialy). Moscow. no.1, 1954. 96 p. (MIRA 9:4)  
(Irtysh Valley--Folds (Geology)) (Irtysh Valley--Petrology)

SHAYLIKOV, A.S.; KAZANTSEV, G.V.; PROSKURIN, N.V.; RUSANOV, A.K., redaktor;  
STEPANOVA, L.S., redaktor; POPOV, N.D., tekhnicheskii redaktor.

[Work practices in the spectrum analysis laboratory of the Geological  
Administration] Opyt raboty spektral'noi laboratorii geologicheskogo  
upravlenii. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geologii i  
okhrane nedr, 1954. 1954. 26 p. (Trudy laboratorii geologicheskikh  
upravlenii, trestov, ekspeditsii i partii, no.5) (MLRA 10:4)  
(Spectrum analysis)  
(Chemical laboratories)

KHAN, O.A.; PARAMONOV, I.V.; STEPANOVA, L.S.

Purification of solutions and the distribution of arsenic and  
antimony in the hydrometallurgy of zinc. TSvet.met.27 no.3:20-24  
My-Je '54. (MIRA 10:10)  
(Zinc--Metallurgy) (Antimony) (Arsenic)

STEPANOVA, L.S., redaktor; AVERKIYEVA, T.A., tekhnicheskiiy redaktor.

[Instructions for senior and shift foremen in the use of  
clay mortar in exploratory drilling] Instruktivnye ukazaniia  
po primeneniiu glinistykh masvorov v razvedochnom burenii  
dlia starsikh i smennykh burovykh masterov. Moskva, Gos.  
nauchno-tekhn.izd-vo lit-ry po geologii i okhrane neдр, 1955.  
[Microfilm] (MLBA 9:1)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut  
mineral'nogo syr'ya  
(Boring) (Clay)



ALEKSANDROVA, M.I.; BORSUK, B.I., OGNEV, V.M., redakter, STEPANOVA, L.S.,  
redakter; GUROVA, O.A., tekhnicheskiy redakter.

Geological structure of Paleozoic bedrock in the eastern area of  
Bet-Pak-Dala. Trudy VSEGBI 7:3-303 '55. (MLRA 9:2)  
(Bet-Pak-Dala--Geology)

STEPANOVA, L.S.

PAL'YANOV, Petr Fedorovich; VOSDVIZHENSKIY, B.I., redaktor; STEPANOVA, L.S.  
redaktor; KRYNOCHKINA, K.V., tekhnicheskiy redaktor.

[Vibrators used in exploratory drilling] Vibratory v razvedochnom  
bureni. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geologii i  
okhrane neдр, 1956. 66 p. (MLRA 9:6)  
(Bering)

Stepanova, L. S.

Behavior of antimony during neutralization of zinc sulfate solutions in hydrometallurgy of zinc. O. A. Khan and L. S. Stepanova. *Vestnik Akad. Nauk Kazakh. S.S.R.* 12, No. 2, 82-8 (1980).—Pptn. of Sb from  $ZnSO_4$  solns. occurs only with simultaneous pptn. of Zn. Thus the usual industrial neutralization of  $ZnSO_4$  solns. does not cause an adequate removal of Sb. In the presence of  $Fe^{+++}$  the pptn. of Sb is complete at pH about 5.5 with 7/1 ratio of  $Fe/Sb$ , and at pH 8.2 with 10/1 ratio. G. M. K.

②

SHIMONAYEV, G.S.; STEPANOVA, L.S.

Polarographic method for the determination of additives boosting  
the cetane number of diesel fuels. Khim.i tekhn. topl.i masel 7  
no.9:67-70 S '62. (MIRA 15:8)  
(Diesel fuels)

STEPANOVA, L.V., inzh.

Temperature of the cutting part of a turning tool. Vest.mashinostr.  
42 no.5:74-77 My '62. (MIFA 15:5)  
(Metal-cutting tools)

Psychiatry

5

CZECHOSLOVAKIA

ZAPLETALEK, M.; STRNAD, M.; KOMENDA, S.; VACKOVA, M.; BARBORAKOVA, E.; STEPANOVA, M.; HRBEK, Jan; BERAN, J.; SIROKA, A.; Psychiatric Clinic, Palacky University, Olomouc; Psychiatric Hospital, Sternberk. [Original version not given].

"Alimenazine, Chlordiazepoxide, Meprobamate, and Placebo in Anxious Depression Therapy."

Prague, Activitas Nervosa Superior, Vol 8, No 4, Nov 66, pp 437 - 438

Abstract: Effect of the compounds mentioned in the treatment of 24 patients suffering from neuroses is described. The results were evaluated on the basis of the Knobloch AD questionnaire. The score of complaints before any treatment was 1385, after administration of a placebo 1104, with alimenazine 853, with chlordiazepoxide 812, and with meprobamate 779. 1 Table, 12 Western, 6 Czech, 1 Japanese reference. Submitted at the 8th Annual Psychopharmacological Meeting at Jesenik, 18 - 22 Jan 66. Article is in English.

1/1

ZAPLETALEK, M.; RIKOVSKY, S.; RYCHLA, D.; STRNAD, M.; HORAK, L.;  
HRIBAL, R.; STEPANOVA, M.

Clinical and ambulant experiences with majeptil therapy.  
Activ. nerv. sup. 5 no.2:200-201 My '63.

1. Psychiatricka klinika lekarske fakulty PU, Olomouc -  
Psychiatrica lecebna, Sternberk.

(SCHIZOPHRENIA) (NEUROSES, OBSESSIVE-COMPULSIVE)  
(PSYCHOSES, MANIC-DEPRESSIVE) (MENTAL DISORDERS)  
(THIOPROPERAZINE)

STEPANOVA, M.

By means of staff training. Voen.znan. 41 no.11:18-19  
N '65. (MIRA 18:12)

1. Nachal'nik shtaba grazhdanskoy oborony Moskovskogo  
zavoda imeni Vladimira Il'icha.



GOREGLYAD, Kh.S., akademik; STEPANOVA, M.A., veterinarnyy vrach

Causes for the softening of meat products. Trudy NIVI 1:291-295  
'60. (MIRA 1:10)

1. AN Belorusskoy SSR i Akademii sel'skokhozyaystvennykh nauk  
Belorusskoy SSR (for Goreglyad).  
(Sausages)

S/169/61/000/012/086/089  
D228/D305

AUTHORS: Yerofeyev, N. M., Klimova, Z. N., and  
Stepanova, M. R.

TITLE: Characteristics of the ionosphere above  
Ashkhabad in February 1960

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 12, 1961,  
25, abstract 12G200 (Izv. AN TurkmSSR. Ser.  
fiz.-tekhn., khim. i geol. n.: 1961, no. 2,  
100-103)

TEXT: The results are given for the processing of the obser-  
vations of the ionospheric station at Ashkhabad in February 1960  
and for their comparison with the forecast and observations of  
February 1959. The values of  $f_oF2$  observed in February 1960  
were below the forecast values (by up to 27%), the greatest de-  
viations being observed in the night and morning hours. In

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Characteristics of the...

S/169/61/000/012/086/089  
D228/D305

February 1960, the magnitudes of  $f_oF_2$  were lower than in February 1959. The percentage appearance for  $E_s$  fell from 44% in February 1959 to 30%. The ionospheric disturbances of February 1960 are described. The degree of disturbance in February diminished in comparison with January 1960 and February 1959. The quietest day in respect of the magneto-ionospheric activity (24/II) was distinguished, and  $Nh$ -profiles were calculated for it. [Abstracter's note: Complete translation.] ✓

Card 2/2

BERKELIYEV, M.B.; YEROFYEV, N.M.; STEPANOVA, M.B.

State of the inosphere over Ashkhabad in June 1960. Izv.  
AN Turk. SSR. Ser. fiz.-tekh., khim. i geol. nauk no.6:107-  
110 '61. (MIRA 15:3)

1. Fiziko--tekhnicheskiy institut AN Turkmenskoy SSR.  
(Ashkhabad--Ionosphere)

BOGDANOVA, M.D.; YEROFEYEV, N.M.; STEPANOVA, M.B.

Characteristics of the ionosphere over Ashkhabad in May 1960. Izv.  
AN Turk. SSR. Ser. fiz.-tekh., khim. i geol.nauk no.5:114-117 '61.  
(MIRA 14:11)

1. Fiziko-tekhnicheskii institut AN Turkmenskoy SSR.  
(Ionosphere)

YEROFEYEV, N.M.; STEPANOVA, M.B.-----

Effect of the level of solar activity on the probable occurrence of the sporadic E layer (according to observations made in Ashkhabad).  
Izv. AN Turk. SSR. Ser. fiz.-tekhn., khim. i geol.nauk no.5:32-38  
'61. (MIRA 14:11)

1. Fiziko-tekhnicheskiy institut AN Turkmenskoy SSR.  
(Sporadic E (Ionosphere)) (Sun)

BERKELIYEV, M.; YEROFEYEV, N.M.; STEPANOVA, M.B.

State of the ionosphere over Ashkhabad in April, 1960. Izv.  
AN Turk. SSR. Ser. fiz.-tekh., khim. i geol. nauk no.4:106-109  
'61. (MIRA 14:12)

1. Fiziko-tekhnicheskiy institut AN Turkmenskoy SSR.  
(Ashkhabad—Ionosphere)

BERKELIYEV, M.; YEROFEYEV, N.M.; KLIMOVA, Z.N.; STEPANOVA, M.B.

Characteristics of the ionosphere over Ashkhabad in March 1960.

Izv.AN Turk.SSR.Ser.fiz.-tekh., khim.i geol.nauk no.3:92-95 '61.

(MIRA 14:7)

1. Fiziko-tekhnicheskiy institut AN Turkmenskoy SSR.  
(Ionosphere)



ACC NR: AP7002239 (A) SOURCE CODE: UR/0280/66/000/006/0093/0097

AUTHOR: Peshes, L. Ya.; Stepanova, M. D.

ORG: none

TITLE: Method of determining limit loads for performing of accelerated tests

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 6, 1966, 93-97

TOPIC TAGS: limit load determination, reliability test, limit load algorithm

ABSTRACT: A method of determining the limit load is proposed for accomplishing reliability testing in the shortest time possible. A time reduction is achieved by using more rigid conditions (as compared to those in exploitation) to increase the rate of destruction. It is based on general rules pertaining to loss of efficiency by various types of manufactured objects. The algorithm for finding the limit load is presented. Orig. art. has: 2 figures and 6 formulas. [Based on authors' abstract] [DW]

SUB CODE: 09/ SUBM DATE: 3Mar66/ ORIG REF: 003/

Cord 1/1

STEPANOVA, M. G.

PHASE I

TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 603a - I

BOOK

Call No.: TL504.M63

Authors: SHAPOV, V. M., Dotsent, GUDCHENKO, A. P., Eng. and STEPANOVA, M. G., Eng.

Full Title: STUDY OF SOME METHODS OF TREATMENT OF LIQUID ELECTRON ALLOY In: Moscow  
Aviatsionnyi Tekhnologicheskii Institut. Trudy. Issue 4, 1948

Transliterated Title: Issledovaniye nekotorykh metodov obrabotki elektrona v zhidkom  
sostoyanii

PUBLISHING DATA

Originating Agency: Moscow Aviation Technological Institute

Publishing House: State Publishing House of the Defense Industry (Oborongiz)

Date: 1948 No. pp.: 29 (3-31) No. of copies: Not given

Editorial Staff

Ed.-in-Chief: Voronov, S. M., Prof., Doc. of Tech. Sci.

PURPOSE: For scientific workers in aviation technology and materials.

TEXT DATA

Coverage: The authors explain to what degree the method of treatment of the "Electron"  
alloy ML-5 in stationary crucibles influences its' crystalline structure and its  
mechanical properties. The results of the authors' experiments are summarized at  
the end of the article.

Tables, charts.

No. of References: 7 Russian, 1938-1946

Facilities: None

1/1

SHAIKOV, V. M., Docent; GUBCHENKO, A. P., Engr.; STEPANOVA, N. G., Engr.

"A study of several methods of processing Elektron (magnesium bar alloy) in a liquid state"

Trudy, Moscow Aviation Inst. of Technology, No. 4, 1948

STEFANOVA, M. G. Cand Tech Sci -- (diss) "Technology of the <sup>foundry</sup> ~~technology~~ of  
magnesium alloys with the <sup>use</sup> ~~application~~ of non-toxic VM additions." <sup>also</sup>  
Mos, 1968. 18 pp (State Committee of the Council of Ministers for <sup>Aviation</sup> ~~Aircraft~~  
Engineering). (KL, 62-58, 103)

PHASE I BOOK EXPLOITATION SOV/5685

Fridlyander, I. N., Doctor of Technical Sciences, and B. I. Matveyev, Candidate of Technical Sciences, eds.

Teploprochnyy material iz spechennoy alyuminiyevoy pudry [SAP]; ~~stornik~~ statey (Heat-Resistant Material From Baked Aluminum Powder [SAP]; Collection of Articles) Moscow, Oborongiz, 1961. 122 p. Errata slip inserted. 3,550 copies printed.

Reviewers: M. F. Bazhenov, Engineer, and M. Yu. Bal'shin, Candidate of Technical Sciences; Ed.: M. A. Bochvar, Engineer; Ed. of Publishing House: S. I. Vinogradskaya; Tech. Ed.: V. I. Oreshkina; Managing Ed.: A. S. Zaymovskaya, Engineer.

PURPOSE : This collection of articles is intended for scientific workers and engineers in the institute and plant laboratories of the metallurgical and machine-building industry; it may also be useful to instructors and advanced students.

COVERAGE: The 12 articles contain the results of research on the structure, properties, and manufacture of semifinished products  
Card 1/5

Heat-Resistant Material From (Cont.)

SOV/5685

from sintered aluminum powder. The technology for the manufacture of aluminum powder and briquets is described as are sintering processes, and pressing, rolling, drawing, and sheet-stamping methods. The dependence of the properties of semifinished products on the aluminum-oxide content of the powder, on the degree of hot and cold deformation, and on the stresses of pressing is investigated. Also investigated are the mechanical and corrosive properties of semifinished products, the mechanism of hardening of sintered aluminum powder, the reasons for blister formation, and the possibility of recrystallization. Data on sintered aluminum alloys are included. No personalities are mentioned. References in the form of footnotes accompany the articles.

TABLE OF CONTENTS:

Introduction

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Gerchikova, N. S., N. I. Kolobnev, M. G. Stepanova, and I. N. Fridlyander. Effect of Aluminum-Oxide Content on the Structure  
Card 2/5

Heat-Resistant Material From (Cont.)

SOV/5685

and Properties of Pressed Articles From SAP [Sintered Aluminum Powder]

5

Stepanova, M. G., G. P. Zenkov, Ye. M. Lekarenko, and L. A. Sarul'. Aluminum Powder for SAP

17

The work was carried out with the participation of G. N. Pokrovskaya, Chief of TsZL; R. V. Nesterenko, Acting Chief of the Shop; and Engineers L. I. Kibitova, N. D. Chumak, and N. I. Kolobnev.

Matveyev, B. I., M. G. Stepanova, and N. I. Kolobnev. Effect of Specific Pressure in Pressing on Properties of Semifinished Products From SAP

30

Matveyev, B. I., S. I. Nomofilov, and V. A. Shelamov. Pressing of Semifinished Products From SAP

36

The work was carried out with the participation of Engineers A. V. Fedotova and I. R. Khanova, and Senior Technician L. S. Perevyazkin.

Card 3/5

Heat-Resistant Material From (Cont.)

SOV/5685

Gorelik, S. S., A. I. Litvintsev, and E. P. Belova. Special  
Features of Recrystallization of Sintered Aluminum Powder (SAP) 88

Litvintsev, A. I., and V. M. Polyanskiy. On the Nature and  
Mechanism of Blister Formation in SAP 100

Matveyev, B. I., P. V. Kishnev, and I. R. Khanova. Properties  
of Semifinished Products From Sintered Aluminum Powder 108

Krivenko, R. A., Ye. A. Kuznetsova, and I. N. Fridlyander.  
Sintered Aluminum Alloys 113

AVAILABLE: Library of Congress

JA/wrc/jw  
10-27-61

Card 5/5



S/724/61/000/000/011/020

AUTHOR: Stepanova, M.G.

TITLE: Means for the elimination of "black fracture" in AA8 (AL8) alloy castings.

SOURCE: Liteynyye alyuminiyevyye splavy; svoystva, tekhnologiya plavki, lit'ya i termicheskoy obrabotki. Sbornik statey. Ed. by I. N. Fridlyand and M. B. Al'tman. Moscow, Oborongiz, 1961, 88-93.

TEXT: The paper describes an experimental attempt to overcome the so-called "blackening" and "black fracture" which M. Whitaker (Foundry Trade J., August 1953, 13) had attributed to an interaction of the melt with the moisture of the mold, and which forms preferably in massive parts of a casting and in points in which the shrinkage cavities are especially concentrated, that is, during a slow crystallization process. It is established that a chemical compound of the type of the  $MgO \cdot Al_2O_3$  spinel forms, the black color of which is attributable to the presence of Fe impurities in the alloy. The introduction of 4-5% of a protective additive to the molding mixture, consisting of boric acid or a BM (VM) mixture comprising 60% technical urea, 25% Al sulfate, and 15% boric acid, is found to be effective. A clean fracture in castings having a maximum cross-section of 50 mm or more is possible only with the introduction into the alloy of 0.05% Be and 4-5% of the above-mentioned protective

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Means for the elimination of "black fracture" .... S/724/61/000/000/011/020

additive into the molding mixture. There are 2 figures, 4 tables, and 2 references  
(1 Russian-language Soviet and the 1 English-language U.S. paper cited in the text).

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ACCESSION NR: AT4012706

S/2981/63/000/002/0005/0012

AUTHOR: Matveyev, B.I.; Fridlyander, I.N.; Agarkov, G.D.; Stepanova, M.G.; Vlasova, P.T.

TITLE: Properties and application of blanks made of sintered aluminum powder (SAP)

SOURCE: Alyuminiyevy\*ye splavy\*. Sbornik statey, no. 2. Spechenny\*ye splavy\*. Moscow, 1963, 5-12

TOPIC TAGS: powder metallurgy, aluminum powder, sintered powder, sintered aluminum powder, SAP, SAP blank

ABSTRACT: In a general review of the uses and properties of SAP, it is pointed out that heat-resistant deformed alloys of sintered aluminum powder at 350-500C are significantly stronger than standard deformed aluminum alloys. This is explained by the finely dispersed oxide phase uniformly distributed in the aluminum matrix. Parts made of SAP, whether from APS-1 or APS-2 powder, show corrosion resistance practically equal to that of ordinary aluminum. The technology of the briquetting, sintering and pressing of SAP is described. The following blanks are commonly made of SAP-1: rods and pipes up to 200 mm in diameter, sections up to 100 sq. cm and over, sheets 900 mm wide, up to 3 m in length

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ACCESSION NR: AT4012708

S/2981/63/000/002/0023/0027

AUTHOR: Stepanova, M. G.; Kolobnev, N. I.; Kibitova, L. I.

TITLE: Shape and dimensions of the particles of aluminum powder for making blanks of SAP

SOURCE: Alyuminiyevy\*ye splavy\*. Sbornik statey, no. 2. Spechenny\*ye splavy\*. Moscow, 1963, 23-27

TOPIC TAGS: powder metallurgy, aluminum powder, sintered aluminum, sintered aluminum powder, SAP, aluminum blank

ABSTRACT: A peculiarity of the process of manufacture of SAP is that the size of the aluminum particles is critical, since the amount of surface area exposed depends on the granularity of the aluminum, and, in turn, the formation of aluminum oxide depends on the amount of surface exposed. An electron microscopic investigation carried out by the authors demonstrated the influence of an increase in pulverization on the particle size and bulk density of the aluminum particles. It was discovered that coarsening of the elementary particles and an increase in the bulk density do not begin simultaneously. In the manufacturing process, grade APS aluminum powder was first pulverized in ball mills, the size of the elementary particles being less than  $75\mu$ . The powder began to form

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ACCESSION NR: AT4012708

lumps after 16 hours, even though a size of  $75\mu$  was reached only after 24 hours. During pulverization in a ball mill, the powder passes through three stages. The aluminum is first flattened and then leaf-shaped, work-hardened particles are obtained. The particles are then crushed finer. The beginning of this process is accompanied by an increase in the specific gravity of the powder. The fine powder particles adhere to each other forming conglomerates or powder lumps. "The investigations of particle size and shape were carried out with an electron microscope under the guidance of N.S. Gerchikova." Orig. art. has: 7 figures.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 13Feb64

ENCL: 00

SUB CODE: MM

NO REF SOV: 001

OTHER: 001

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L 40990-06 EWP(s)/EST(m)/EWP(t)/ETI/EWP(k) IJR(c) JH/JD

ACC NR: AT6024932

(A,N)

SOURCE CODE: UR/2981/66/000/004/0214/0218

55  
b11

AUTHOR: Lekarenko, Ye. M. (deceased); Stepanova, M. G.; Sarul', L. A.; Kolobnev, N. I.; Zenkov, G. P.

ORG: none

TITLE: Aluminum powder for high-strength SAP alloy

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat resistant and high-strength alloys), 214-218

TOPIC TAGS: aluminum alloy, aluminum powder, TENSILE STRENGTH, high strength alloy, sintered aluminum powder, ~~sintered aluminum powder alloy~~, metal property/SAP aluminum alloy

ABSTRACT: SAP-1 and SAP-2 alloys made of APS-1 and APS-2 grade aluminum powder (respective content of aluminum oxide 6—9 and 9—13%) have a tensile strength of 26—32 kg/mm<sup>2</sup> and 32—38 kg/mm<sup>2</sup>, respectively. By increasing the content of aluminum oxide to 23% the strength of alloys can be increased up to 45 kg/mm<sup>2</sup>. Two new grades of aluminum powder were developed: APS-3 with 13—18% aluminum oxide and APS-4 with 18—23% aluminum oxide. Since the content of aluminum oxide depends on the fineness of the powder, which in turn depends on the duration of grinding (APS-1 and APS-2 powders require 25 and 35 hr grinding), the grinding process was modified to accelerate oxidation and lower the consumption of stearic acid (which is added to prevent the agglomeration of powder particles). SAP alloys made from APS-3 and APS-4 powders

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ACC NR: AT6024932

have a tensile strength of 40—50 kg/mm<sup>2</sup> at room temperature and 13—15 kg/mm<sup>2</sup> at 500C, which makes it possible to use these alloys in structures operating at 350—500C instead of steels and titanium alloys. Orig. art. has: 2 figures and 1 table. [TD]

SUB CODE: 11 / SUBM DATE: none/ ORIG REF: 003/ OTH REF: 001/ ATD PRESS: 5057

Card 2/2

11b

ACC NR: AT6024941

(A,N)

SOURCE CODE: UR/2981/66/000/004/0277/0287

AUTHOR: Komissarova, V. S.; Kireyeva, A. F.; Stepanova, M. G.; Fridlyander, I. N.

ORG: none

TITLE: Corrosion resistance of SAP material

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat resistant and high-strength alloys), 277-287

TOPIC TAGS: sintered aluminum powder, corrosion resistance

ABSTRACT: The corrosion resistance of SAP-1 sintered aluminum powder material in the atmosphere and in 3% NaCl was studied in the presence of 0.1% H<sub>2</sub>O<sub>2</sub> as a function of the content of aluminum oxide (1 to 16%) and iron (0.01 to 1%) on rods and sheets. It was found to be close to that of pure AOO aluminum. The iron admixture has an undesirable effect on the corrosion resistance of SAP material, and the iron content should therefore be limited to 0.2%. Above this value, the elongation loss after 10 months of tests in the atmosphere amounts to an average of 25-30%. Studies of the electrochemical behavior of SAP as a function of the aluminum and iron content showed the data on the corrosion resistance to be in full agreement with the results of electrochemical measurements: iron is an active cathodic inclusion, and its content above 0.2% is not permissible; aluminum oxide can also be regarded as a cathodic inclusion,

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ACC NR: AT6024941

but it displays only a very slight effectiveness in 3% NaCl solution. Orig. art. has:  
7 figures and 7 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 006

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SEREBRYANIKOV, S.N.; SHELEKHINA, A.L.; STEPANOVA, M.I.

Determining the dielectric permeability of paint materials.  
Lakokras. mat. i ikh prim. no.4:54-55 '63. (MIRA 16:10)

STEPANOVA, M.K.

Experience in the operation of a production line for the manufacture  
of refined granulated sugar. Sakh.prom. 36 no.5:27-29 My '62.  
(MIRA 15:5)

1. Cherkasskiy rafinadnyy zavod.  
(Sugar manufacture) (Assembly-line methods)

STEPANOVA, M.K.

Collective of the Cherkassy Refinery struggles to reduce sugar losses. Sakh. prom. 37 no.4:13-14 Ap '63. (MIRA 16:7)

1. Cherkasskiy rafinadnyy zavod.  
(Cherkassy—Sugar manufacture)